

What is claimed is:

1. A method for detecting a DNA polymorphism in a double strand DNA, said method comprising the steps of (a) to (d) below:

5 (a) contacting (i) a double strand DNA comprising a test polymorphic site, (ii) an oligonucleotide probe that hybridizes to a region comprising said polymorphic site in said double strand DNA, and (iii) a homologous recombination protein under reaction conditions where a triple strand DNA complex is formed,

10 (b) removing the homologous recombination protein from the triple strand DNA complex formed in the step (a), thereby generating a triple strand DNA,

15 (c) conducting heat treatment of the triple strand DNA generated by removing the homologous recombination protein, under conditions where the oligonucleotide probe is released from said triple strand DNA, when the test polymorphic site in the double strand DNA is not complementary to a corresponding site in said oligonucleotide probe,

20 (d) detecting an oligonucleotide probe that binds to the double strand DNA to form the triple strand DNA,

25 2. The method of claim 1, wherein the double strand DNA comprising a test polymorphic site has a DNA terminus,

3. The method of claim 2, wherein the test polymorphic site is located within 20 bases from the DNA terminus,

4. The method of claim 1, wherein the length of the oligonucleotide probe is from 20 to 120 bases,

30 5. The method of claim 1, wherein the homologous recombination protein is a RecA protein from *E. coli*,

6. The method of claim 1, wherein, in the step (a), a nucleotide triphosphate is added to the reaction system,

7. The method of claim 1, wherein, in the step (b), the homologous recombination protein is removed by conducting protein degradation enzyme treatment,

35 8. The method of claim 7, wherein the protein degradation enzyme is proteinase K,

9. A kit for detecting a polymorphism in a double strand DNA comprising a test polymorphic site, said kit comprising the following components:

5 (a) an oligonucleotide probe that hybridizes to the double strand DNA comprising the test polymorphic site and

(b) a homologous recombination protein,

10. A kit of claim 9, further comprising at least one selected from the group consisting of (i) a reagent removing the homologous recombination protein, (ii) nucleotide triphosphate, and (iii) a buffering agent.

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